

Attorney Docket No. 12622US02

**SUPPORTED CATALYSTS FOR THE ANODE OF A VOLTAGE
REVERSAL TOLERANT FUEL CELL**

Abstract

In a solid polymer fuel cell series, various circumstances can result in a fuel cell being driven into voltage reversal. For instance, cell voltage reversal can occur if that cell receives
5 an inadequate supply of fuel. In order to pass current, reactions other than fuel oxidation may take place at the fuel cell anode, including water electrolysis and oxidation of anode components. The latter may result in significant degradation
10 of the anode, particularly if the anode employs a carbon black supported catalyst. Such fuel cells can be made more tolerant to cell reversal by using higher catalyst loading or coverage on the anode catalyst support or a more oxidation
15 resistant anode catalyst support, such as a more graphitic carbon or Ti_4O_7 .